

IN THE CLAIMS:

Claims 1-14 and 16 are currently amended, Claims 20-28 are cancelled, Claims 15 and 17-19 remain in this application, and Claims 29-38 are new.

1 1. (Amended) A semiconductor laser device comprising:
2 a plurality of laser light oscillators that each emit a laser beam from an outlet
3 thereof; and
4 ~~an optical element~~ a diffraction grating that at least partially reflects, scatters, or
5 transmits a laser beam that is oscillated in at least one of the laser light oscillators and is emitted
6 from an outlet thereof, so that a portion of the laser beam is incident on at least one of the other
7 laser light oscillators to enable phase locking.

1 2. (Amended) The semiconductor laser device according to Claim 1,
2 wherein the plurality of laser light oscillators are included in a semiconductor
3 laser array element, and
4 the ~~optical element~~ diffraction grating is disposed so as to face the outlet of the at
5 least one of the laser light oscillators, the ~~optical element~~ diffraction grating being a translucent
6 member that (a) partially transmits the laser beam and (b) partially reflects or scatters the laser
7 beam so that a portion of the laser beam is directed to the at least one of the other laser light
8 oscillators.

1 3. (Amended) The semiconductor laser device according to Claim 1,
2 wherein the plurality of laser light oscillators are included in a plurality of
3 semiconductor laser array elements in such a manner that at least two laser light oscillators are

4 included in each laser light oscillator in an array, the plurality of semiconductor laser array
5 elements being stacked up, and

6 the ~~optical element~~ diffraction grating is disposed so as to face the outlet of the at
7 least one of the laser light oscillators included in one of the semiconductor laser array elements,
8 the ~~optical element~~ diffraction grating being a translucent member that (a) partially transmits the
9 laser beam and (b) partially reflects or scatters the laser beam so that a portion of the laser beam
10 is directed to the at least one of the other laser light oscillators included in the other
11 semiconductor laser array elements.

1 4. (Amended) The semiconductor laser device according to Claim 1,

2 wherein a reflecting optical path, a scattering optical path, and a transmitting
3 optical path of the ~~optical element~~ diffraction grating are directed to the outlet of the at least one
4 of the other laser light oscillators, thereby the portion of the laser beam is directed in a vicinity of
5 an optical axis of the laser beam at the outlet of the at least one of the other laser light oscillators.

1 5. (Amended) The semiconductor laser device according to Claim 2,

2 wherein the ~~optical element~~ diffraction grating is a flat plate having a main
3 surface that is either a flat plane or a scabrous plane, the main surface being an incidence plane
4 of the laser beam, and the optical element partially reflects or scatters the laser beam on the main
5 surface.

1 6. (Amended) The semiconductor laser device according to Claim 3,

2 wherein the ~~optical element~~ diffraction grating is a flat plate having a main
3 surface that is either a flat plane or a scabrous plane, the main surface being an incidence plane

4 of the laser beam, and the ~~optical element~~ diffraction grating partially reflects or scatters the laser
5 beam on the main surface.

1 7. (Amended) The semiconductor laser device according to Claim 2,
2 wherein the ~~optical element~~ diffraction grating is a flat plate which includes a ~~the~~
3 diffraction grating on a main surface thereof, the main surface being an incidence plane of the
4 laser beam, and the ~~optical element~~ flat plate partially diffracts the laser beam on the diffraction
5 grating at a predetermined angle when the ~~optical element~~ diffraction grating partially reflects
6 the laser beam.

1 8. (Amended) The semiconductor laser device according to Claim 3,
2 wherein the ~~optical element~~ diffraction grating is a flat plate which includes a
3 diffraction grating on a main surface thereof, the main surface being an incidence plane of the
4 laser beam, and the ~~optical element~~ flat plate partially diffracts the laser beam on the diffraction
5 grating at a predetermined angle when the ~~optical element~~ diffraction grating partially reflects
6 the laser beam.

1 9. (Amended) The semiconductor laser device according to Claim 7,
2 wherein the ~~optical element~~ diffraction grating directs -1st order diffracted light
3 and +1st order diffracted light generated when the laser beam is partially diffracted, so as to be
4 respectively incident on laser light oscillators that are adjacent to the at least one of the laser light
5 oscillators from which the laser beam has been emitted.

1 10. (Amended) The semiconductor laser device according to Claim 8,
2 wherein the ~~optical element~~ diffraction grating directs -1st order diffracted light
3 and +1st order diffracted light generated when the laser beam is partially diffracted, so as to be
4 respectively incident on laser light oscillators that are adjacent to the at least one of the laser light
5 oscillators from which the laser beam has been emitted.

1 11. (Amended) The semiconductor laser device according to Claim 2,
2 wherein the ~~optical element~~ diffraction grating has been subjected to hologram
3 processing so as to function as a hologram to condense or collimate a portion of the laser beam
4 that has transmitted therethrough.

1 12. (Amended) The semiconductor laser device according to Claim 3,
2 wherein the ~~optical element~~ diffraction grating has been subjected to hologram
3 processing so as to function as a hologram to condense or collimate a portion of the laser beam
4 that has transmitted therethrough.

1 13. (Amended) The semiconductor laser device according to Claim 2,
2 wherein the plurality of laser light oscillators each have two outlets, from one of
3 which the laser beam is emitted to be reflected, scattered, or diffracted by the optical element,
4 and from the other of which the laser beam is emitted from the semiconductor laser array
5 element,
6 the ~~optical element~~ diffraction grating is disposed so as to face the one outlet of
7 each of the laser light oscillators, and reflects, scatters, or diffracts the laser beam.

1 14. (Amended) The semiconductor laser device according to Claim 3,
2 wherein the plurality of laser light oscillators each have two outlets, from one of
3 which the laser beam is emitted to be reflected, scattered, or diffracted by the ~~optical element~~
4 diffraction grating, and from the other of which the laser beam is emitted from the semiconductor
5 laser array element,
6 the ~~optical element~~ diffraction grating is disposed so as to face the one outlet of
7 each of the laser light oscillators, and reflects, scatters, or diffracts the laser beam.

1 15. (Original) The semiconductor laser device according to Claim 3,
2 wherein the plurality of semiconductor laser array elements respectively include
3 substrate layers that have been cut out of one semiconductor wafer.

1 16. (Amended) The semiconductor laser device according to Claim 2,
2 wherein the plurality of ~~semiconductor laser array elements each have~~ oscillators
3 are in a single array and each has a real refractive index guided self-aligned structure.

1 17. (Original) The semiconductor laser device according to Claim 3
2 wherein the plurality of semiconductor laser array elements each have a real
3 refractive index guided self-aligned structure.

1 18. (Original) A multiple wavelength laser light emitting apparatus, comprising:
2 a plurality of semiconductor laser devices that each emits a plurality of laser
3 beams, wavelengths of the laser beams emitted from each semiconductor laser device being
4 different from wavelengths of the laser beams emitted from a different semiconductor laser
5 device; and

6 an optical element that condenses a plurality of laser beams emitted from each of
7 the plurality of semiconductor laser devices at a predetermined position,
8 wherein at least one of the semiconductor laser devices is the semiconductor laser
9 device described in Claim 1.

1 19. (Original) The multiple wavelength laser light emitting apparatus according to
2 Claim 18, further comprising:

3 an adjusting means for adjusting a position at which the plurality of laser beams
4 emitted from each of the plurality of semiconductor laser devices are condensed, by driving the
5 optical element;

6 a laser driving means for selecting a semiconductor laser device that emits laser
7 beams each having a designated wavelength, out of the plurality of semiconductor laser devices,
8 and driving the selected semiconductor laser device; and

9 a control means for controlling the adjusting means in accordance with a
10 wavelength of the laser beams to be emitted.

1 20. (Cancelled)

1 21. (Cancelled)

1 22. (Cancelled)

1 23. (Cancelled)

1 24. (Cancelled)

1 25. (Cancelled)

1 26. (Cancelled)

1 27. (Cancelled)

1 28. (Cancelled)

1 29. (New) A semiconductor laser device comprising;

2 a plurality of laser light oscillators that each emit a laser beam from a respective
3 outlet; and

4 an optical element that at least partially directs a sufficient portion of a laser beam
5 from the plurality of laser light oscillators to enter another of the plurality of laser light
6 oscillators to enable a phase locking of the respective laser light oscillators, when the respective
7 outlets of the laser light oscillators are aligned with the optical element to enable each one of the
8 laser light oscillators to receive at least a portion of the laser beam from another of the plurality
9 of laser light oscillators to enable a phase locking of each one of the plurality of laser light
10 oscillators.

1 30. (New) The semiconductor laser device according to Claim 29 wherein the optical
2 element is a diffraction grating.


1 31. (New) The semiconductor laser device according to Claim 29 wherein the optical
2 element is a flat plate.

1 32. (New) The semiconductor laser device according to Claim 29 wherein the optical
2 element includes a hologram to collimate portions of the laser beams transmitted therethrough.

1 33. (New) The semiconductor laser device according to Claim 29 wherein the laser
2 light oscillators each have a refractive index guided self-aligned structure and are arranged
3 parallel to each other.

1 34. (New) The semiconductor laser device according to Claim 33 wherein each of
2 the laser light oscillators include GaInP/AlGaInP quantum well active layers.

1 35. (New) The semiconductor laser device according to Claim 29 wherein the optical
2 element directs between 10% to 30% of the incident laser beam to enter other laser light
3 oscillators.

 1 36. (New) The semiconductor laser device according to Claim 29 wherein the optical
2 element directs the sufficient portion of the laser beam at an optical axis of another laser light
3 oscillator.

1 37. (New) The semiconductor laser device according to Claim 29 wherein the optical
2 element is a diffraction grating with vertical and horizontal grooves that cross each other.

1 38. (New) The semiconductor laser device of Claim 29 wherein the plurality of laser
2 light oscillators are arranged in a plurality of arrays, each array includes a plural number of laser
3 light oscillators, the arrays are vertically stacked and the optical element partially directs a
4 sufficient portion of a plurality of laser beams from each array to enter laser light oscillators of
5 other stacked arrays to enable a phase locking of all of the laser light oscillators.
